



Road B Module 6

REFEREE & JUDGE | CYCLO-CROSS

The Road B Modules are designed so that officials can take the initiative to learn more about the various tasks involved in working a bicycle race to work toward advancement to a level B official. This is an important designation as level B officials are qualified to be the Chief Referee of any local race. Each module contains a pre-test and the answer key as well as reading lists. Use these tools to test your knowledge and to learn more about best practices that are recognized nation-wide.

As a part of this process, contact a member of the National Technical Commission (NTC) in your area to be set up with an RB Module Google spreadsheet. This spreadsheet is where you will have mentors rate your progress on the skills associated with each module, with the opportunity to leave feedback in the notes section that can be very specific to you, and with the goal of helping you assess your strengths as an official and have a clear idea of what you still need to work on as you are working races. Below are the steps of that process for this module.

1. Take the pre-test included in this document and grade yourself with the answer key.
2. Complete the required reading listed below, making note of components that were included in the pre-test and anything else that resonates with you.
3. While working races as an official, review the list of skills related to a cyclo-cross official and actively work on those skills as the opportunity arises.
4. Invite a mentor who has observed you using these skills at races to edit your **RB Module Progress GoogleDoc**. Your mentor can then rate you on the Cyclo-cross tab and make comments about your progress as applicable. You may invite multiple mentors to rate you - you are not limited to one. Your goal for this module is, with practice, to be at "Developing skill" or above for at least 70% of all the Cyclo-cross skills (if you have CX in your area).
5. Retest yourself if it would be helpful for you.

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GOALS

The purpose of this module is to provide the Assistant Referee for road events with the necessary information and experience needed for refereeing at a criterium. The module serves as part of the training necessary for Level C officials to advance to a Level B official.

After successful completion of this module, the Level C Road Official will be able to:

1. An understanding of the concepts and terminology used in cyclo-cross races.
2. Referee: Demonstrate an understanding of:
 - a. Starter and Call-ups
 - b. Pit Referee
 - c. 80% zone referee
 - d. Applicable penalties
3. Scoring and Timing: estimate and track the following:
 - a. Lap times
 - b. Lap count
 - c. Laps to go
 - d. Riders off the front
 - e. Riders who have been lapped by the leaders and number of laps down
 - f. Times for each rider at the finish of the event
 - g. Riders who did not finish (DNF)
 - h. Understanding of time calculation to determine number of laps and early bell/pull time
4. Effectively use radio communications

REQUIRED READING

[USA Cycling Rulebook](#)

- General Regulations | 1C1. Age-based Classes
- Chapter 4 | Cyclo-cross Racing

READING INCLUDED IN THIS MODULE

- Cyclo-cross

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SKILLS FOR THIS MODULE

In step 4. of the process of completing your modules, your mentor will provide a ranking and feedback on the following skills in your **RB Module Progress GoogleDoc**. If you do not have a GoogleDoc set up for you yet, contact your local member(s) of the National Technical Commission. That list can be found at the bottom of the [official's upgrade page](#) at USA Cycling.

Ranking for the Cyclo-cross skills runs from “No experience” to “Some exposure” to “Developing skill” to “Fulfilling local needs with support” to “Fulfilling local needs independently”.

CYCLO-CROSS SKILLS
Starter for race with a single start
Starter for race with multiple starts
Utilize and respect the call-up order
Check that riders are gridded safely
Accurate records of riders in the pit, DNFs*
Understanding of pit referee decisions*
Track lap times
Calculate number of laps
Write up an order of finish
Record the winning time
Record times for all riders*
Place lapped/pulled riders correctly
*OPTIONAL: where applicable in some areas

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PRE-TEST

1. Cyclo-cross bicycles may NOT:
 - a. Be a mountain bike
 - b. Have fenders
 - c. Be a fixed gear bicycle within a non-fixed gear field
 - d. Carry water bottles
2. At the start of a race riders typically come to the line
 - a. In 'le mans' style and run to their bicycles
 - b. In rows according to the race director's favorites
 - c. In rows according to a ranking system
 - d. First come, first serve as in other mass start races
3. Riders entering the pit
 - a. Must exchange equipment or make some repair or adjustment
 - b. Can run from one end to the other without their bicycle
 - c. May enter from either end, depending on which one is closest
 - d. Have three steps in which to make a bicycle exchange
 - e. Can cut the course to get there if the Starter states it's OK
4. Riders can change out their wheels or equipment
 - a. Anywhere on course as long as they do it themselves
 - b. Only in the official repair pit
 - c. With a teammate anywhere on course
 - d. In the parking lot, as long as they notify the officials first
5. Lapped riders
 - a. Must leave the course and are listed in the results as "DNF"
 - b. Are listed alphabetically in the results without a place and the designation "Lapped"
 - c. Finish the same number of laps as the race leaders
 - d. Must yield the right of way on the course to riders overtaking them
6. Riders can receive water bottle hand-ups
 - a. Only from a hand-up in the pit
 - b. From a hand-up anywhere on course
 - c. Only from the designated feedzone, if approved by the Chief Referee
 - d. Only by exchanging their bicycle in the pit with one that has a water bottle on it

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7. A rider who shows up in the middle of call-ups and has missed their call-up to the front row of a race
 - a. Can come in late take and their position on the front row
 - b. Must start at the back of the grid
 - c. Causes a new call-up to be made so the correct number of riders are on each row
 - d. Takes the next available slot in the call-up order
8. The leader's lap time is 7 minutes 12 seconds. Calculate:
 - a. Number of laps for a 45-minute race: _____
 - b. 80% time cut: _____
9. In a 6-lap race, rider 312 is lapped once by the race leader and then finished early (about 1 minute ahead of the leader's finish. How many laps down should rider 312 be scored?
 - a. _____

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PRE-TEST, Answer Key

1. Cyclo-cross bicycles may NOT:
c. Be a fixed gear bicycle within a non-fixed gear field
2. At the start of a race riders typically come to the line
c. In rows according to a ranking system
3. Riders entering the pit
a. Must exchange equipment or make some repair or adjustment
4. Riders can change out their wheels or equipment
b. Only in the official repair pit
5. Lapped riders
d. Must yield the right of way on the course to riders overtaking them
6. Riders in a non-UCI, amateur cyclo-cross race can receive water bottle hand-ups
c. Only from the designated feedzone, if approved by the Chief Referee
7. A rider who shows up in the middle of call-ups and has missed their call-up to the front row of a race
d. Takes the next available slot in the call-up order
8. The leader's lap time is 7 minutes 12 seconds. Calculate:
a. Number of laps for a 45-minute race: 6
b. 80% time cut: 5:46
9. In a 6-lap race, rider 312 is lapped once by the race leader and then finished early (about 1 minute ahead of the leader's finish. How many laps down should rider 312 be scored?
a. 2

Cyclo-cross

COURSE CHARACTERISTICS

A cyclo-cross race is a 2.5 km-3.5 km circuit set up on varying terrain with stakes, course tape, and fencing. Since this a fall and winter discipline, the course should be able to be ridden in all weather conditions. The course can include roads, gravel and dirt paths, open grassy areas, in addition to having obstacles installed or created specifically for the race that may force riders to dismount and run. The goal is a circuit that alternates challenging areas with flowing sections where the riders can recover, and 90% of the course should be rideable.

START

Several officials may be assigned to the start of a race. The primary started is generally the Chief Referee in a local race. The starter works with other officials to ensure that call-ups are done in a proper order, according to the plan the race director has indicated in the race flier, in the technical guide, or arranged with the Chief Referee before the race. Some races have a call-up order for the entire field, some local races only have a call-up order for the first few rows of the grid and then have the remaining riders fill the remaining rows. Occasionally a small race will not have a call-up at all.

Once the riders are gridded for the start, the starter will give pre-race announcements. Announcements should be brief, but generally include at least the following:

- Estimated length of the race (time)
- Time gaps between starts for groups of riders for waves with multiple starts
- Location of lap cards
- Location of first aid facilities
- Method for dealing with lapped riders
 - Lapped riders left in – give way to overtaking riders, don't interfere with their race
 - Early bell option
 - 80% with pull zone location

Additionally, the Starter will announce to the riders that the start may be given any time after they hear 30 seconds to start. Stand in front of the riders until after the 30 second warning. This will help prevent a false start from happening. The following countdown warnings are given for a local race:

- One minute
- Thirty Seconds
- Whistle, gunshot or green light start

The Starter is responsible for judging the fair start of the race. If a rider leaves before the start is given, a false start is to be called, penalties (if any) are then assessed by the Chief Referee, and a new call-up is to be done. This is time consuming and will put you behind schedule. Best practices dictate that if you notice the riders are on edge, blow the whistle for the start as soon as you leave the course in order to avoid having a false start.

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LAPPED RIDERS

For local races, lapped riders are generally left in the field to race. When that is the case, they will either finish on the same lap as the leader(s) or be finish early by ringing the bell early for riders who may lose a lap to the leader(s) in the last lap.

80% Zone

Used almost exclusively for UCI elite fields, riders who about to be lapped in the race are removed from the course, which is done ONLY at a specified zone in order to establish a correct order of finish in the results for these riders. A referee is assigned to this area.

During the race, generally the Chief Judge (or an assistant) will announce the time of the first full lap raced (not including the lead-in). If you are assigned as the 80% referee, start your own watch, either on the race start or on the first time the riders pass you to get a lap time. Multiply the first lap time by 80% to create the time differential behind the leader that you will use to determine when riders are to be pulled. Take a split on the leader each lap at the 80% zone. When the 80% time is reached, a radio announcement is made, “Last rider on course #xxx. All other riders will be pulled.” Record the bib number of riders pulled, in the order they are pulled, along with the elapsed time into the race. The report is given to the Chief Judge after the finish of the race. Be sure to note on this report the category of riders. Sign the report so the Chief Judge can come back to you with any questions.

Remember, the 80% is more a guideline than a rule. Early in the race, looking for a clear break in riders you allow through, which means you may start pulling riders a little earlier than 80%. You should also score the race and keep track of the time back for riders who are losing time to the leaders. A rider who lost 2 minutes in one lap may need to be pulled earlier than 80%. The goal is to keep the course clear for the leaders—a rider should not have passing lapped riders affect their result. It is also important that the leader is not crossing the line at the finish with a lapped rider. Any rider about to be lapped at the finish should be pulled before their finish and placed in the same manner as above.

WORKING AS A PIT REFEREE

In a local or regional cyclo-cross race, the pit referee watches for the following:

- Ensure riders do not use the pit lane without exchanging or adjusting equipment
- Monitor mechanics and other helpers in the pit that they do not block the pit lane
- Supervise mechanics and other helpers working in the pit
- Supervise the bike wash area in the pit—resources should be shared
- Ensure that any spectators not working are not in the pit area
- Keep track of the races and any issues to report

Riders entering the pit MUST exchange equipment (wheel or bike) or make an adjustment to their equipment (i.e. reseating a wheel, adjusting a shift/brake lever, etc.). This is important because at times, the pit lane can be faster than the racing lane, and a rider should not receive an advantage over other competitors by using the pit lane. Use your judgement for amateur racers—if the pit lane was taken by accident, and the advantage was corrected, then no other penalty is needed other than coaching the rider. The situation will be a bit different for an elite UCI rider.

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Feeding in the pit is prohibited: A rider may exchange bikes where the pit bike has a fresh bottle on it, but hand-ups (at-speed taking of a bottle) in the pit is not allowed. If you see a mechanic with a bottle, let them know that feeding in the pit is prohibited before their rider arrives.

Bicycle exchanges in the pit: Riders should not make forward progress without a bicycle in any race. However, bicycles are exchanged in a cyclo-cross pit by dropping the current bike behind the bike being held and then running no more than 1-2 bike lengths for the replacement bike. Riders should not drop bikes such that they block the entrance or the pit lane, nor should they drop their bike, and then run the length of the pit looking for their pit bike.

The pit referee also watches to ensure that riders only enter via the pit entrance and leave by the correct pit exit. In the case of a double pit (at most races), the rider cannot cut the course by leaving the pit through the opposite exit point. In an amateur race some riders get disoriented in the search for their bike, so assist them with exiting through the correct exit.

Supervise mechanics and bike wash: At the same time, the pit referee is responsible for monitoring the mechanics and other assistants as they bring equipment to and from the pit and as they are helping with exchanges. Riders and mechanics bringing equipment to the pit should use the designated pit entrance and walk equipment in and out (there is no riding in the working area of the pit area). There should be no more than two mechanics per rider to help with exchanges. Those mechanics share the space in the pit with other rider's mechanics, they should not block the pit lane, and they should only cross the pit lane to the fencing if their rider dismounts off-handed from the way the pit is set up (generally this is a rider who dismounts on the left side).

Part of this responsibility is making sure that the bike wash area, if there is one, remains orderly and is equally shared by all wanting to use it. If there is an issue with the bike wash, notify the Chief Referee and/or the race director that assistance is needed.

Track the race and anything to report: The Pit Referee should keep track of the leader and riders losing ground. Additionally, there may be situations to report. Some situations can be transmitted immediately over the radio. For example, a rider with bib # 137 enters the pit from the correct pit entrance, the rider lets you know that they are finished and walks out of the pit. This will be a short radio call: "Pit to judges." "Rider one thirty-seven, one three seven, abandoned." Other situations should not be transmitted in detail over the radio. For example, a rider cuts the course to get to the pit. There is no way to rectify the situation. The rider should be disqualified, but rather than put this out over the radio, simply state that "there is an issue with the finish order of rider #xxx", or, "please see me before the end of this race" in order to convey the importance of the situation.

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SCORING AND TIMING

As with other circuit races (criteriums, short track), it is essential to keep scoring at all times. It is the Assistant Judge's responsibility to keep a running scoring record of everyone who crosses the finish line for every lap. Use the same system of symbols for when riders are lapped or abandon (DNF) the race as you do in a criterium or road race. The main difference is that a cyclo-cross race will string out after the first lap so that almost every rider can be identified every lap.

If the conditions are muddy, it often becomes difficult to read rider numbers. Instead, note the color of the jersey and as much of the number as can be read. By comparing one lap to the previous lap, it may be possible to identify the unknown rider numbers. Sometimes it is necessary to go beyond the finish line to stop riders and record numbers.

Timing a cyclo-cross race

Some local races do not post race times with the results; however, timing a cyclo-cross race is a part of the judges' responsibility as accurate lap times are needed in order to determine the number of laps for the race, and the rider's time back from the leaders are needed to track riders that are being or will be lapped. At regional races and UCI races, the judges should record finish times for all riders.

Make sure to start a stopwatch at the start of each race and take a split on the finish line so you have an accurate first lap time that does not include the lead-in from the starting grid.

Lap times: Keep a record of the time of each lap. Note the total time in the race. This will help to determine the number of laps in the race, solidify your scoring information in case someone else has conflicting information. Lap times are great information for the announcer's commentary.

80% Time: The Chief Referee needs to know the average lap time and what 80% of the first full lap is if the 80% pull option is being used. This information comes from the judges/timers and is generally only used for the elite UCI fields at a bigger race.

Determine the number of laps: Use the time of the first full lap of the race (or the average of two laps, if it is a longer race). Divide the total time by the average lap time to determine the correct number of laps for that race. Consult with the Chief Referee on the number of laps remaining to show the riders. Generally, the riders should see laps counting down by the second full lap of the race. Make sure you account for any lead-in by subtracting the lead-in time from the total race time before calculating the total laps.

Early bell: Some regions give off the back riders one-to-go and the bell ahead of the race leader receiving the bell. This spirit of the early bell is to assure that riders who are at risk of losing a lap to the leader in the last lap know they are finishing and can sprint against other people they are with. The use of the early bell is dependent upon your local race scene. Consult with the more experienced officials in your area about whether early bell is used and how to calculate and determine when to ring the early bell. This is an art form and consulting with experienced officials will help you develop this skill.

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Scoring a cyclo-cross race

Use your judging skills developed for similar races on a circuit, like criteriums, cross-country races, and scratch races. Below are some notes specific to cyclo-cross.

Lap Count and Laps to Go: On the scoring sheet, keep a running record of how many laps the racers have done as well as how many laps are remaining in the race.

Riders off the front and off the back: Score as many riders as is possible. If you miss a rider, put an X until you can identify the unknown rider. Placing a mark or highlighting on the previous lap to check off those riders who have come through the finish will assist in tracking and identifying riders, particularly if numbers become unreadable.

Lapped riders: As riders get lapped, track them according to their “laps down” (-1, -2, etc.) on your score sheet as much as possible. If time permits keep a separate record of lapped riders. At the end of the race, the Chief Judge will need to produce the bib numbers of those lapped riders and how many laps the riders are down to the leaders. By using symbols in the scoring sheets to identify lapped riders as you go it becomes much easier to identify those riders at the end of the race.

Riders not finishing (DNF): It is important to note in a scoring sheet the lap and time that riders are noted as DNF in a race. This is important information in determining the final results and can help rule out the possible bib numbers for riders who cannot be identified in the final results.

Pulled Riders: Riders who are pulled are given a place with the number of laps remaining to be completed at the time they were pulled.

Record a finish time for all riders or groups or riders: Even though some local races do not post finish times with the results (only the order of finish), it is good to get into the habit of recording finish times. Use local races to practice this skill that is needed at regional and UCI races.

Scoring the final lap and writing up the finish order: Be at the finish line to score all racers who finish. Create an order of finish from your notes and collaborate with other judges to verify lapped riders and placing pulled riders. Riders who have been pulled or lapped are scored according to the number of laps down relative to the race leader, either the number of times they were lapped or the laps remaining when pulled. If a rider shows up on your start list and is marked as not starting by the starter, that rider should show up as DNS (Did Not Start).

Label your notes: In addition to the name of the race and the category of racers in the wave, make sure to put your name, license number, and date on your score sheets. If there are multiple sheets, staple them together and give them to the Chief Judge after each wave.

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RADIO COMMUNICATION

Communications should be concise. Do your best to speak clearly and calmly. Keep in mind that radio frequencies aren't private and your communications may be heard by anyone. Most communication at a cyclo-cross race is between the judges, the pit referee(s), and the 80% official (if being used). As with any radio communication, be aware of what is happening in the race, and who else may be trying to transmit before you push the button to talk.

Medical emergencies should be called over the radio immediately, simply stating that a rider needs medical attention at (course location). Add the rider's number to your notes and broadcast the information at a point that there is no radio traffic.

Course repair, when needed, is reported to the race director, possibly on a dedicated channel.

Tips for using the radio

- Use titles, not names. For example, say "Pit to Judges", not "Dave to Joe."
- Keep the radio out of the wind.
- Listen.
- Anticipate responses to other conversations. For example, the pit calls in a request for medical to the Chief Referee, but the Chief Referee has not called back yet. Do not start a radio transmission at this time that steps on the transmission of the Chief Referee.
- Know the titles of everyone you will be calling.
- Examples of typical radio calls:
 - After a rider calls it quits (unfixable bike, etc.):
 - Pit to judges
 - Go for judges
 - Rider 34 (called as thirty-four, three four) has abandoned
 - Judges confirm rider thirty-four as DNF

Radio calls that should be made every lap at a cyclo-cross race:

- "Leader #xxx at (location, like pit 1, pit 2)"
- "Leader(s) at the finish line seeing # laps to go"
- "Tail #xxx at (location, like pit 1, pit 2)"
- "Rider(s) #(s) have been lapped. New tail (Last rider) #xxx."
- "Rider #xxx has abandoned"

In addition, if the early bell is rung, the judges will announce the new tail, which will be the last finisher on the course ("new tail #xxx, #xxx is the start of riders getting an early bell").

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CYCLO-CROSS TERMINOLOGY

[in alphabetical order]

Abandon: Did Not Finish

Barriers: A set of planks with a maximum height of 40 cm. Regional events allow up to 3 pairs of barriers on a course. A single log or set of double logs counts as one set of barriers and has the same height and width restrictions.

Bike Wash: The bike wash area is not mandatory, but is an area set aside by the race director that is in the proximity of the pit. Some riders bring their own washing equipment, and some race directors will provide hose bibs or power washers for mechanics or riders to clean bicycles during the event. Only bike wash equipment that will be shared by all race participants is allowed in the pit area. A secondary bike wash area well away from the pit may be identified for riders who are not currently racing, to allow them to clean their bikes of excess mud after their race.

Course Tape: Since the race generally takes place in open fields or parks, caution tape is used to delineate the course. Natural boundaries can also assist in marking the course for riders and spectators.

Did Not Start: Riders noted as not taking the start at the Start grid are reported as “DNS” to the Chief Judge. This can assist in identifying unknown riders. Noting the DNS riders provides a more complete set of results.

Early Bell: The “last lap” bell may be rung early for riders off the back (OTB) who are at risk of being lapped by the race leaders. The goal is that riders know when they are on the finishing lap.

Exchange of bicycles: Exchanges are normally done on the fly with the rider dismounting, taking the new bicycle and immediately remounting. The exchange should be as immediate as possible, with only a few steps in between dropping the first bicycle and taking the replacement. Relatively speaking, this should not be much more than 1-2 bike lengths.

Feed Zone: The Chief Referee may, after consulting with the race director, and depending on weather conditions, decide to set up a specific area as a feed zone. This area ideally will be in a slower area of the course that is not technical in nature. In general, it should not be in the pit.

Flyover: A rideable man-made bridge that enables the course to form a figure-8. Sometimes a flyover used as a spectator crossing point that does not need a crossing marshal.

Lapped Riders: Riders who have been overtaken by the leaders.

Leaders: The lead rider or riders on course who have complete the farthest distance (laps) relative to the others competitors.

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Obstacles: Obstacles on the course should not require any acrobatic feats, but they may require a rider to dismount. An amateur course may have no more than 6 obstacles and any obstacle must be less than 80 m in length with a maximum height of 40 cm.

Pit: The pit is the only location on course where riders can exchange wheels or equipment. Ideally it will be located in a large, flat area with ample space for equipment. A “double pit”, accessible from two sides of the course, is ideal.

Pit Boxes: Boxes are areas in the pit where equipment is stored for making exchanges during the race. The pit box is defined as being 4 meters deep and 2 meters wide. Generally, boxes can be set up with sections of fencing and are only required at National Championships and UCI events.

Pit Lane: The pit lane is separated from the racing lane by tape or fencing and is marked with yellow flags at the entrance and exit of the lane. The flags mark the “buffer zone” where riders in the racing lane can go backwards on the course, taking care not to interfere with other riders, and enter the pit lane to make an equipment exchange. Once past the exit flag, riders are required to continue under their own power to get to the next pit entrance.

Run-Up: The run-up is a steep area of the course that may require riders to dismount and run up.

Sand Pit: Non-natural sand pits may be incorporated into the course. Regional events will often use sand volleyball courts as a sand pit. Natural sand areas are not considered obstacles.

Stairs: Sometimes incorporated into a flyover, in which case the flyover becomes one of the obstacles. The course may only include going up a set of stairs (never down).

Start Grid: The start grid is the area where riders line up before the start of their race. The start grid typically is 8 lanes wide, with sufficient space for a bicycle [8x75cm=6 meters]. At regional events, if the start area is narrow, fewer lanes may be used. Riders should not be allowed to overlap wheels with the row in front of them. Crowding can result in crashes just after the start.